

SURVIVAL KIT INSTRUCTIONS



This kit is designed to keep you alive in an unplanned wilderness survival situation. The kit items and advice within this guide were curated by military survival experts who remind you that your best survival tool is your mind. Before heading into the field with this kit, you should examine each component. **Know what is in your kit!** If you do get lost, always stay calm, give yourself time to think, and be decisive. You were born with superb survival and endurance skills, so be confident and stay positive!

So you're lost...now what?

First things first...stay calm. It's important that you don't act rashly. Take a breath. Panic can make a situation worse than it is. While it may seem counterintuitive, try to slow down your movements. Rushing can lead to injury. Overheating burns energy and water. It causes you to sweat, which makes you cold when you stop.

- ◆ **Assess:** Are you with someone or alone? Do you know where you are located? Do you know where the nearest road or trail is? Are you injured and, if so, is it life threatening? Did you tell somebody about your outdoor adventure? What time of day is it? What is the weather doing?
- ◆ **Tools:** What do you have with you? Take a look at what items you have to work with and let's make a plan. **Right now is the time to locate and secure your survival kit.** Keep it with you, zip it shut and try not to set anything down on the ground — it can be really easy to lose a knife or compass when you need it most.
- ◆ **Prioritize:** What do you need to do first to make it through? Even though you may be in a survival or emergency situation, you will make your situation better by making good decisions and taking action.

CONTENTS OF YOUR KIT

FIRE

Smaller "Ultralight" Kit

- Stormproof matches (5)
- Quick Tinder Cotton (4)

Additional items in full "Hiker" Kit

- Waterproof matches (1 pack)
- Ferro metal rod (1)
- Ferro rod scraper (1)
- Quick tinder cotton (4)
- Waxed firestarter candle (1)

Your own additions

- Small lighter in Ultralight (suggested)
- _____

SHELTER, CLOTHING, TOOLS

Smaller "Ultralight" Kit

- Pocket knife (1)
- Poncho (1)

Additional items in full "Hiker" Kit

- Emergency mylar bivy (1)
- Foam seating pad (1)
- Gloves (1 pair)
- Mosquito head net (1)
- Cord (50 feet)
- Duct tape (1 small roll)

Your own additions

- _____

FOOD & WATER

Smaller "Ultralight" Kit

- Honey packet (1)
- Electrolyte packet (1)
- Water purification tablets (10)
- Plastic water bag (1)

Additional items in full "Hiker" Kit

- Honey Packet (3)
- Electrolyte Packet (3)

Your own additions

- _____
- _____
- _____

NAVIGATION & SIGNALING

Smaller "Ultralight" Kit

- Compass (1)
- Whistle (1)
- Signaling reflector (1)
- Flashlight (1)
- Extra battery for flashlight

Additional items in full "Hiker" Kit

- Waterproof notebook (1)
- Mechanical pencil (1)
- Pen (1)
- Sharpie (1)
- Flagging tape (15 feet)

Your own additions

- _____
- _____
- _____
- _____

MEDICAL

Smaller "Ultralight" Kit

Pain/Stomach/Nausea

- Ibuprofen (1 packet)
- Diamode (1 packet)
- Dimenhydrinate (1 packet)

Wounds/Cuts/Blisters

- Bandaid (2)
- Steristrip bandage (1)
- Gauze Pad (1)
- Self adhesive wrap (1 roll)
- Castile Soap (1 towelette)
- Antibiotic ointment (1 packet)
- Triangular bandage (1)

Bugs/Burns/Allergies

- Sunblock (1 packet)
- Benadryl (1 packet)
- Bug repellent (1 packet)

Your own additions

- _____
- _____
- _____
- _____

Additional items in full "Hiker" Kit

Pain/Stomach/Nausea

- Ibuprofen (4 packets)
- Acetaminophen (4 packets)

Wounds/Cuts/Blisters

- Diamode (2 packets)
- Dimenhydrinate (2 packets)
- Pepto Bismol (2 packets)

Wounds/Cuts/Blisters

- Bandaid (4)
- Nitrile gloves (1 pair)
- Micropore tape roll (1)
- Gauze pad (3)
- Gauze rolls (2)
- Elastic bandage roll (1)
- Self adhesive roll (1)
- Antibiotic ointment (2 packets)
- Hydrocortisone cream (4 packets)
- Wound seal clotter (1 tube)

Bugs/Burns/Allergies

- Sunblock (3 packets)
- Burn cream (2 packets)
- Benadryl (1 packet)

Link to electronic
version of
instructions



Tools and tactics to help you stay warm

FIRE

Smaller "Ultralight" Kit

- Stormproof matches (5)
- Quick Tinder Cotton (4)

Additional items in full "Hiker" Kit

- Waterproof matches (1 pack)
- Ferro metal rod (1)
- Ferro rod scraper (1)
- Quick tinder cotton (4)
- Waxed fire starter candle (1)

Your own additions

- Small lighter (suggested)

Typically, the most dangerous element in a survival situation is exposure to the elements. It's important you pay attention keeping your body temperature stable. A survival situation is not the time to push your limits in the heat or cold. While you might feel tempted to rush so that you can find safety, you should be focused on not making your situation more difficult than it already is. Aimless walking in desert heat, for instance, will quickly deplete your energy. If you need to move in the hot desert, try timing your movement in the early and late hours of the day when the sun is less intense. If it's cold where you are, make every effort to stay dry and warm. You can get hypothermia even when the weather is above freezing. Hypothermia is much more likely to happen if you are exhausted and your clothing is wet, so do your best to avoid these situations. If your clothes are soaked and it's getting cold, use a fire to dry out your clothes before it gets dark.

Take a moment right now to assess your environment. What is the approximate temperature? How close to sunset? What is the weather doing now? What weather do you think will occur in a few hours? If you're already cold and/or wet, it may be time to begin building a fire so you can warm up before the temperature drops with nightfall. Be honest with yourself. If you're unsure how to find your way back to help and night is approaching, it may be time admit you will need to prepare for a survival night out.

Prepare to build a fire. You have matches and tinder in your kit to start a fire. **Choose a place with some natural shelter from the wind and rain/weather and prepare a place for your fire.** If the ground is snow covered, dig to the bare ground and build a platform upon which to start the fire. Slow down and make your efforts count. Gather enough wood right away while it is light. As you gather wood, protect your hands by putting on the gloves from your survival kit. If it is getting dark, make sure you have located the flashlight in your survival kit. Use it to gather some tinder and wood to start your fire, then use the light from the fire to gather more. Don't set your knife or flashlight on the ground — they can be easy to lose!

You need to prepare your tinder and some kindling. Tinder (small wood shavings, dry grass, sap from a tree, the quick tinder and waxed fire starter candle from your survival kit) is what you light first. Then you need to add kindling to grow your fire. Kindling is typically small twigs and branches - the drier the better. As your fire grows, you can add bigger pieces of wood or dried material. Look for dead wood that is still on trees. If a branch snaps off cleanly, it's likely dry and can be burned effectively even if the outside is a little wet from rain. If there are no trees, look for dead grass and bushes. Be careful not to injure your hands. Use your gloves from your survival kit.

Always prepare more tinder and kindling than you think you will need. **Use a platform**, flat rock, piece of bark, anything to keep your fire together and off the wet ground. **Block the wind and strike your match as close to your tinder as you can.** Your survival kit includes large stormproof matches which stay lit for about 10 seconds, and a box of waterproof matches that start easily but are susceptible to wind. Your kit also has a ferro (metal) rod and striker you can use thousands of times. Use strong controlled strokes to put the spark where you want it. The ferro rod needs to be almost vertical and touching the platform for stability. The striker needs to scrape at 90 degrees to the rod. Think about scraping off just a bit of your ferro rod and you will have it right. Be steady and don't rush. The quick tinder cotton in your kit is ideal tinder for using with your ferro rod. You can also start your waxed fire starter candle with your ferro rod by landing a spark on the wick.

Something to keep in mind: fires can be excellent visual signals for aircraft flying at night. You can prepare your fire to be an effective signaling device to aircraft looking for you by gathering large amounts of dry material and keeping it nearby. If you hear an aircraft circling your area, you can quickly stoke the fire to a large size to gather the attention of the aircrew.

Don't get discouraged if it takes you a couple of times. Just stay calm and work steadily. Plan on keeping the fire burning all night if needed. Don't try to break wood into firewood. Instead, save your energy and burn it in half or feed the ends into the fire once you get it going. Be careful not to smother the fire with too much material - all fires need oxygen flow to fuel them. If you don't have your flashlight or it has died, keep some small wood pieces for light if you need to check gear or look for something once it gets dark. If for whatever reason you cannot build a fire, you need to think about building a shelter for the night. And even if you do have a fire going, you should still prepare a shelter to protect you from the elements, especially if it's particularly cold or rainy.

Stay alert for signs of hypothermia! Signs you may be progressing towards hypothermia include uncontrolled shivering, mumbling, confusion, lack of coordination, extreme drowsiness. If you fall into cold water, take action right away! By the time you start shivering, you should be putting on or wrapping yourself with your coat or shelter piece/mylar. Cover your head and try to squeeze/shake off as much water as you can from your clothes quickly. It may not seem like a big difference but pulling off each piece of gear in order and wringing them out and putting them back on can save you a lot of calories trying to dry them.

FIRESTARTER MATERIALS		
Tinder	Kindling	Fuel
<ul style="list-style-type: none"> • Shredded inner bark of trees • Fine wood shavings • Dead grass, ferns, moss • Inner part of dead fungus growing on side of trees • Crushed dry pine cones • Dead evergreen needles • Birch bark • Shredded cedar bark • Shredded paper or tissue • Shredded cotton • Dry, shredded leaves • Dry, rotten wood (aka "punkwood") shredded lightly <p><i>Prepare a "nest" of dry tinder materials, get a spark to catch, then blow gently on the nest.</i></p>	<ul style="list-style-type: none"> • Small twigs either dry on ground or broken off of tree • Small strips of dry wood • Pine knots (aka "fatwood"), dense wood of darker shade on splintered tree stumps, usually inner layers of rotten wood • Bark covered in tree sap • Dry pine cones • If everything is wet, look for dead branches on the lower parts of trees. They should snap off easily. <p><i>Add small pieces of kindling to your burning tinder nest, blow gently, add larger kindling to grow the fire.</i></p>	<ul style="list-style-type: none"> • Dry standing wood and dry dead branches; aim for thickness of a wrist • Dry inside (heart) of fallen tree trunks and large branches • Green wood that is finely split • Dry grass twisted into bundles • Dead bushes & cattail stalks <p><i>Use gloves to protect your hands when gathering fuel. Don't waste energy breaking large pieces of wood, just burn them into smaller pieces. Your fire needs oxygen to easily reach it, so be careful not to smother it with too much wood.</i></p>



KEY POINTS

- ▶ It's critical you don't overheat or get too cold, so try to avoid pushing to your physical limits
- ▶ Start preparing a fire and/or shelter before nightfall
- ▶ Make sure you have enough wood to keep your fire going throughout the night

Tools and tactics to help you build a shelter

**SHELTER,
CLOTHING,
&
TOOLS**

Smaller "Ultralight" Kit

- Pocket knife (1)
- Poncho (1)

Additional items in full "Hiker" Kit

- Emergency mylar bivy (1)
- Foam seating pad (1)
- Gloves (1 pair)
- Mosquito head net (1)
- Cord (50 feet)
- Duct tape (1 small roll)

Your own additions

- _____
- _____

KEY POINTS

- ▶ In severe weather, a shelter may be more important than a fire to keeping you warm
- ▶ Rely on the terrain and materials around you. Don't burn too much energy building a shelter!
- ▶ Avoid sleeping on the bare ground
- ▶ Use your mylar bag as a

A fire may not be enough to protect you during a survival situation, and sometimes weather conditions make fire building very difficult. But even without a fire, you can protect yourself from the cold by building a shelter. Your survival kit has a waterproof mylar sleeping bag that offers some warmth and shelter, but you will benefit from building a larger shelter from the natural elements around you. Your survival kit has cord and duct tape to help you construct a shelter, but no matter what you will need to use some ingenuity!

Keep it simple. Don't spend all your available energy building a shelter or injure yourself while doing so. Look for natural terrain formations that provide protection for you. Use the materials close at hand begin building insulation for yourself. Good insulating materials include leaf litter, pine boughs, large pieces of bark, tall grasses and even snow if you can create walls with it. You'll need a lot of insulating material to keep you warm on cold nights — build at least 6-12 inches of insulating material all around you (more is better!).

A fire and shelter combination is effective, but be aware of fire danger. In general, a fire should be three feet from your shelter. You can build a fire reflector (i.e. small wall of rocks, pine boughs, or tarp if you have one) to push heat from the fire towards your shelter.

Quick shelter: If time is limited before dark, search the immediate area to find a place where you're somewhat protected from the elements (e.g. against a large tree), put on what you have as a jacket or covering (mylar bivy, etc) and look for other shelter items you can pile around yourself (leaf litter, pine boughs, large piece of bark). In the desert you may need look for somewhere to sit off the ground and out of the wind. If you cannot move due to injury, hunker right where you are and make the best of it. If you are hiking with a full backpacking setup and are injured to the point you cannot make it out, then set up camp (even if it means just sliding into your tent without the poles) and take care of yourself before night falls and the full effects of your injury set in.



If you have more time to build a shelter, the simplest option may be locating natural shelter, such as a cave or overhang, where you can add additional insulating material to the ground. Another simple shelter is the debris nest, where you mound natural insulation material into a pile and cover it with anything you have (garbage sack, ferns, pine boughs, etc). Next, simply wedge yourself (inside your mylar bag if you have it) into the middle of the pile, placing insulating materials all around you.

A great shelter option is the debris hut. Construct this by leaning a ridge pole from a higher point (stump, boulder, tree branch) to the ground, then building "ribs" along with other branches. You'll want the angle of those "ribs" to be about 60 degrees. Use the duct tape and cord in your survival kit to keep it together, but you may not need it since the natural materials often hold themselves together rather well. This hut doesn't need to be huge — just big enough for you to crawl in. Pile as much debris as you can all around this structure. Aim for at least 12 inches, but you'll be warmer if you can manage 36 inches.

Sleeping flat on the bare ground will drain your heat and energy. If you don't have a shelter around you, considering sleeping while sitting up and leaning against a tree. Your kit has a foam seating pad that will help keep the ground from stealing your body heat. If you don't have it with you, even sitting on a bundle of sticks or grass is better than sitting directly on the ground. If you need to lay down, you should build a layer of natural materials below you to keep the ground from sapping your body heat. Aim for 12 inches of material.

Your mylar sleeping bag is 100% waterproof, so water can't get in or out. Because of this, the mylar bag can be used as a vapor barrier by cinching it up around your neck or head. Since your body is constantly releasing small amounts sweat, the inside of the bag may get damp. You may need to open the bag up to dry out periodically, but in general the vapor barrier will keep you surprisingly warm even if the inside is slightly damp.

If you're in the deep snow, you can find natural shelter near the base of trees. Crawl into the tree well and use pine boughs and more snow to pile up a shelter around you. Use caution when the snow is very deep! Deep snow can make tree wells dangerous to enter since it can be difficult to climb out. Use your judgment. Another shelter to consider in snow is to tie tree branches and boughs together, then pile snow over it to create a free-standing snow cave (see drawing above). This can take a lot of work but may be necessary to stay warm.

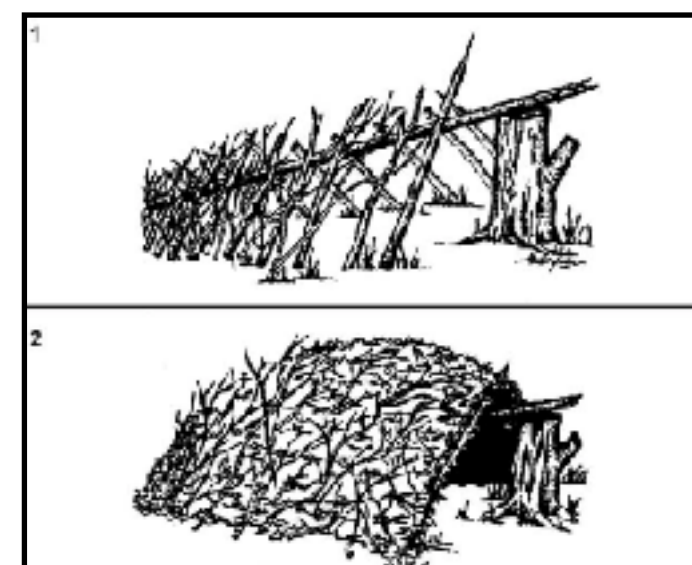


QUICK SHELTER: DEBRIS NEST

Create insulation on the ground

Use mylar bag

Begin piling insulation on top
Aim for 12 inches of insulation



Tools and tactics to help you stay hydrated and fed

FOOD & WATER

Smaller "Ultralight" Kit

- Honey packet (1)
- Electrolyte packet (1)
- Water purification tablets (10)
- Plastic water bag (1)

Additional items in full "Hiker" Kit

- Honey Packet (3)
- Electrolyte Packet (3)

Your own additions

- _____
- _____
- _____
- _____
- _____

Staying hydrated is extremely important. It helps you think clearly, stay warm, and maintain high energy levels. You can only survive a few days without water, so always be thinking about where you can fill your water bottles/bags.

Are you close to a running or standing water source? If so, that is good, but you should purify water collected from natural sources with the Aquatab tablets in your kit. For water that looks clean and clear, one tab can treat about 32 ounces of water (roughly a liter or quart). The plastic water bag in your kit can hold about 36 ounces. If the water is murky, you should use two tablets per quart or liter. If you have no means of purifying the water, look for springs, such as water seeping out from the side of a hill. Spring water is the most likely to be free of the microorganisms that might cause illness.

You can survive a long time without food, so it should not be your number one priority. Still, if you can safely supply your body with calories, you will stay warmer, think more clearly, and find it easier to keep your spirits high.

If you're struggling to find water, concentrate your search in low lying areas and look for large clumps of vibrantly colored vegetation. If the soil is moist, you may need to dig a hole to allow water to seep into it. Eating snow is generally not a great idea to stay hydrated, but you can use your clear water bag, pack it with snow, and keep it close to your fire (or inside your shelter) until it melts. Morning dew can also supply you with some water. Use a cotton shirt or the gauze in your medical kit to soak up dew from grasses, then squeeze the water into your water bag or directly into your mouth. Dew does not need to be purified.

Your body can burn many calories trying to stay warm. Your kit has four honey packets. Each packet has 40 calories. Do you have other food? **If you are cold, try to maintain small but steady caloric intake to help your body stay warm. You may not feel thirsty, but drinking water can also help you stay warm.** If you're injured, taking a sip of water may slow the onset of shock and can help keep you calm. So take a sip of water and have some honey. If you have hard candy then suck, don't chew your hard candy. It will help you calm down and think.

If you need to eat, start by making yourself a digging tool. Find a 24-36 inch long stick with a pointy end. Use that stick to find the easiest source of **food that's usually all around you: ants, grubs, and worms. They aren't pleasant to eat, but they are full of nutritional value.** Trying to catch and eat an animal would likely require too much energy (though do keep your eye out for eggs).

Rules about Berries and Plants

- **"Berries white poisonous sight.** Avoid.
- **"Berries red could be dead."** Red berries are frequently poisonous, as are many smooth-skin berries.
- **"Berries blue should be true."** While many smooth blueberries are ok to eat, some can irritate the skin and make you sick. Don't eat the berry unless you know what it is.
- The **best berries are bunch-a-bunches** (aggregates). Think raspberries, salmonberries elderberries, etc (see photo to the right). There are no known poisonous aggregates.
- **Test a plant or berry** by crushing it on your skin to see if there is a reaction. If no reaction, then you can taste a very small amount (1/4 of a pencil eraser). Touch it to your tongue. No reaction for five minutes? Ok, try one berry. Increase from there.
- Bad plants have a way of letting you know. Avoid milky sap, strong odors, spines, fine hairs, or any plant that stings you. When in doubt, don't eat the plant.
- Eats small amounts of plants until you get accustomed to it - your body needs time to grow microflora to digest all that cellulose
- **Avoid mushrooms:** They provide few calories and some are extremely poisonous.



KEY POINTS

- ▶ Finding water is much more important than finding food
- ▶ Purify your water. If you can't, look for a spring
- ▶ Bugs, grubs, and worms are your best bet for finding high-energy food
- ▶ If you don't recognize any berries but want to test their edibility, choose berries with fruit that grows in small bunches (i.e. raspberries)

Safe Plants

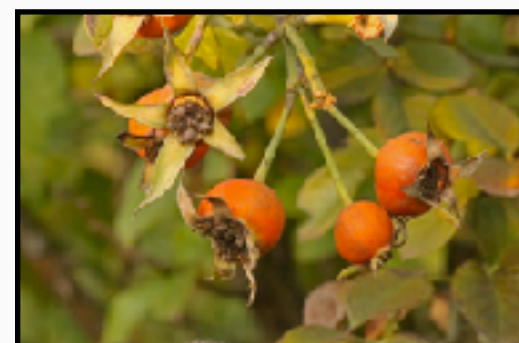
Cattails: This plant is located throughout the world around water and marshes. Eat the new crunchy cream-colored shoots coming off the roots (stop eating when you hit the fibrous part). This is best harvested by yanking up a cluster of roots. Don't be gentle, just pull up a bunch and pick through them. Makes excellent shelter insulation too.

Pines: Pine nuts found in pine cones are easy to recognize and you can typically find them in Spring and Summer. Some are very large like the ones you find in a grocery store. Some are small and still worth eating, although it can be a fair amount of work to get the out. Look for larger cones that have opened up (example image to right). The seeds will be at the base of the "pedals" of the pine cone, encased in a tough skin you'll have to remove. You can sometimes shake them out by pounding on a rock. Pine pollen cones (photo on far right) are smaller and more delicate, but in the spring you can shake out nutritious yellow pollen from these cones. Mix it with water and drink. You can also eat these pollen cones directly. You can also eat the inner bark of pine trees; it's a fine wet, papery layer of bark under the tough outer bark. You've got the right layer if it is easy to chew. Graze, eat a little and drink a lot of water. Pine needles provide few calories but lots of important vitamin C. Either chew them directly or make a tea.

Grasses: This is one of the easiest as long as you chew well and eat small amounts. Find any bunch of grass, locate a fresh green shoot and go to the bottom of it where it comes out of the ground. The crunchy, nutlike part between where the grass gets tough and the root is your best part. Nibble it off and repeat. As long as you eat the nutlike part and stay away from the tough fibrous parts your stomach will handle small amounts.

Cactus: The flesh of the cactus, the flowers, and all the fruit of a cactus are edible. Of course you will have to strip off or burn off the needles first. Remember some needles are very small so take your time. You can eat it raw or boiled or roasted.

Rosehips: Wild roses produce flowers which later end up as rosehips (photo to the right). Rosehips can be eaten raw or cooked. Roast or boil, then chew them well. Rosehip tea is high in vitamin C. You can even find rosehips in the dead of winter still clinging to the plant and edible.



Tools and tactics to help you signal for help

SIGNALLING

If you have a phone, have you called for help? Don't be embarrassed to seek help. Even if you don't have a signal, you should try dialing and texting for help. Have you checked any mapping applications on your phone? Do you know exactly where you are located? Do you know where you can receive help? If you don't know either of those facts, then avoid the temptation of guessing which way to move.

In general, you are most likely to be found if you stay in one place and try to make yourself noticeable. How to do that? You can use sound (whistle or yell loudly every minute or so). You can use visual cues (smoke from fire, your shiny mylar bag placed in open space, your orange flagging tape, bright clothing, etc). You can proactively use visual signals (signaling mirror, flashlights with flashing/strobing action). If you are staying put then take a minute and hang your flagging tape over a high branch or rock so that you can see it and it can be seen by someone else at a distance. Keep this tape in sight if you step away from your fire to get wood, water, or relieve yourself.

Smaller "Ultralight" Kit

- Whistle (1)
- Signalling mirror (1)
- Flashlight (1)

Additional items in full "Hiker" Kit

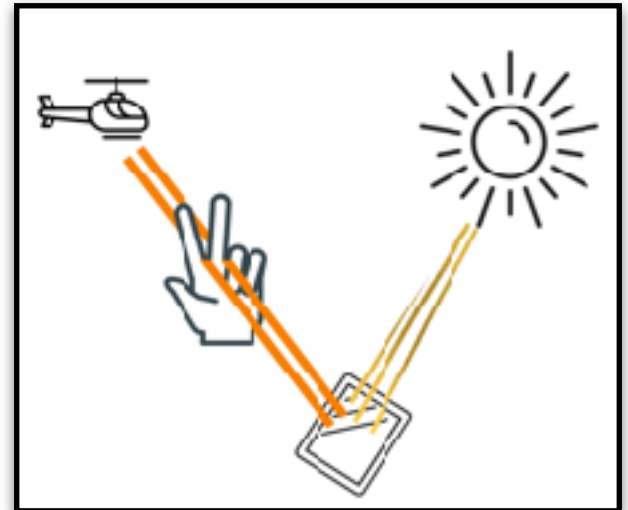
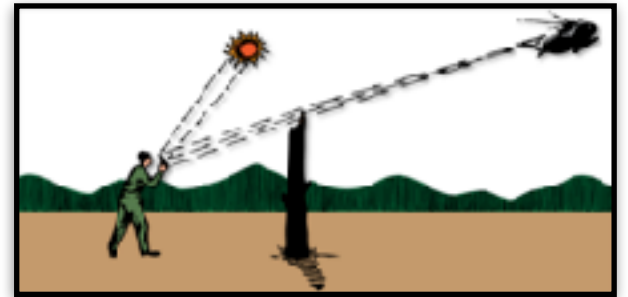
- Mylar bag
- Flagging tape (15 feet)
- Extra battery for flashlight

Your own additions

- _____
- _____
- _____
- _____

Sound: Search and rescue personnel will struggle to locate you if you don't make your presence big. A **whistle** is simple but effective, stretching your presence out hundreds of yards from where you are located. Put your emergency whistle around your neck and blow it at intervals. Three short blasts whenever you can. If you think rescuers are near, blow the whistle at least every minute.

Visual: Visual signals can stretch your presence out many miles. During the daytime, **smoke** works as an effective visual indicator of your location. Thick gray smoke will be visible for many miles. You can create such smoke by burning green plant material with a hot fire. Evergreen boughs work well if they are available. Smoke is an especially useful signal if you are in a heavily forested area. It is very hard for rescuers to spot someone in dense forest, and the range of a whistle also decreases when the whistler is surrounded by vegetation. Your mylar bag is a bright reflective silver and may attract the eyes of rescuers who are in your area. It will be most effective if laid out in the bright sun.



You can attract aircraft or distant hikers by using the **signaling reflector** in your kit. This works just like a signaling mirror. You need direct sun (i.e. no cloud cover) to make it effective. Aim the sun's reflection by holding two fingers in front of you and placing your target in the the "V". Work to reflect the sunlight between your fingers. Move the signaling reflector around slightly to present different angle for the sunlight. For aircraft, an aiming stake can be very helpful. This is a ~5 foot high tree/stump/stick. Move around until you align your target with the top of the aiming stake. Try to hit the the top of the aiming stake with the reflection off your reflector.



The flashlight in your kit is an excellent visual signal at night, especially when in **strobe light** mode. Press the button on the bottom of the flashlight until it cycles into strobe light mode. Flashing lights are much easier for aircrew to see. If you have a flashlight without a strobe mode, you can wave your hand back and forth in front of it to create the strobing effect.

Ground markings: If you are in an open area, you may be able to use ground markings to signal aircraft or rescuers who are scanning your area from an elevated position. Here are some things to think about when making signals on the ground:

- Make them big - at least 3 feet wide and 18 feet long
- Angularity stands out visually, as straight lines and square corners are not found in nature
- Contrast is important. Think dark green branches on white snow. Or dark rocks on tan dirt or sand. Contrast can be improved by outlining a marking with a different colored material.
- Quickly make signals by stamping down grass in a prairie or trampling snow in a snowfield. If possible, increase contrast by outlining the trampled areas with separate material.
- Making ground signal can be a lot of work, so think carefully about location. You want it to be visible from all directions.



Your survival kit has **flagging tape**. If you are on the move, use the flagging tape to leave a trail of "breadcrumbs" behind you. Tie the tape off the ground if you can. Use your permanent marker to write down your name, the date and time, and other pertinent information (where you are headed, medical status, etc). If you are staying put in one location, you can still place the flagging tape all around your general area to make your presence known. Just make sure you can get back to your camp. If you do leave your camp, you should take your survival supplies with you.

Leveraging Remote Technology

- A lost hiker was rescued after stamping out "SOS" in front of a camera monitoring a glacier
- Another lost hiker was rescued after scraping "SOS" in the dirt in front of a cabin with remote security cameras
- Many individuals are rescued with the aid of infrared cameras mounted on aircraft. Make yourself more visible to these cameras by placing your warm body in the middle of a cold area (i.e. snow field) if an aircraft is in the area. Moving around will also help rescuers looking through infrared cameras spot you.

KEY POINTS

- ▶ Effective signals will get you rescued more quickly
- ▶ Use your whistle frequently. Use a fire with thick smoke to create a longer-lasting signal that can be seen for miles.
- ▶ Ground markings are effective daytime cues for aircrew, but be sure they are very large. Use your strobe light at night to attract aircrew attention.

Tools and tactics to help you navigate

NAVIGATION

Smaller "Ultralight" Kit

- Compass (1)
- Flashlight (1)

Additional items in full "Hiker" Kit

- Waterproof notebook
- Mechanical pencil
- Pen
- Sharpie
- Flagging tape (15 feet)
- Extra battery for flashlight

Your own additions

- _____
- _____
- _____

KEY POINTS

- ▶ Don't rush; take the time to maintain a sense of direction
- ▶ You can use natural features (sun, stars) to gain a general sense of direction
- ▶ Be aware of magnetic declination when using your compass

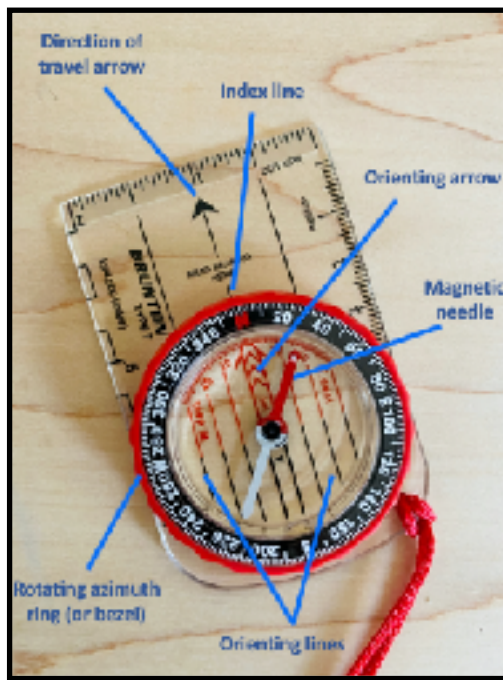
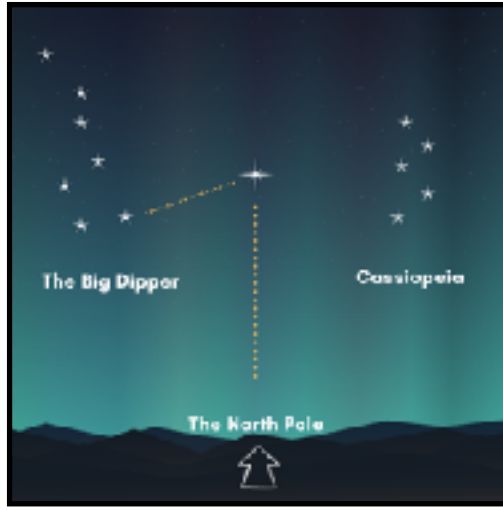
First, assess your need for urgent movement. Are you in a dangerous place, like a dry creek bed which can flash flood? Or a ridge exposed to lightning? Remove yourself from immediate danger by trying to find a nearby place that provides some shelter from the elements. Then try to make yourself noticeable with your signaling techniques.

Now the big question: to stay or go? The general advice is to stay put and concentrate on signaling for help, but only you know the exact circumstances. Are other people likely to be in your area? Will somebody look for you soon? Do you have an injury that needs urgent attention? Think carefully, then act decisively. Right now, if you are sitting by a fire in a fairly safe area and blowing your whistle in intervals, you are doing pretty well. Take a minute to slow down and take stock of everything around you. Sometimes our rush to fix whatever got us into this situation causes a bit of an overload and we can miss things that might help us later. One simple thing to do that can center yourself is to check to make sure you still have all of your kit items.

Navigation Basics

Directional awareness:

Your kit comes with a compass, but you may already have a general sense of which way is north. Are you on a trail? Which direction does it generally travel in? Is there a mountain or river nearby that can help you orient yourself? Remember the sun rises in the east and sets in the west. At night, you can look for the north star (see figure to right) to determine the general direction of north. If you feel utterly lost, stop and take action to regain your bearings. Your compass and map are the tools you need to get back on track.



Get out your compass:

Your compass will help bring clarity to your situation. It is important to keep a few things in mind when using a compass. Use the compass diagram to the right as a reference while you read through these instructions (it may not look exactly like your compass, but it all compasses have the same main parts), and follow the below guidelines:

- Hold the compass about waist high and level in front of the body
- Magnetic fields from large metal objects or power lines will cause your compass to give incorrect readings, so move away from them when using the compass
- When following a bearing, follow the direction of travel arrow, not the orienting arrow (easy mistake to make!). Guidance on finding and following a bearing is on the next page.

What is declination?

"True north" is the north pole, but your compass points to **magnetic north**, a location in northern Canada that moves slightly each year. Maps, however, are oriented to **true north**. The difference between the two is called **declination**. In general, the declination in populated areas of the world is between 0° to 30° east or west.

Why pay attention to declination? Because you want to orient your map to true north, so all the geographic features on the map align with what you see when you look up.

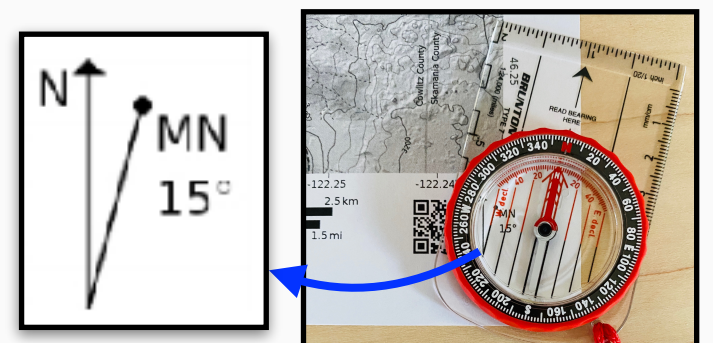
Below are two different ways to adjust for declination:

Option 1: When you place north (or the "N") at the 12 o'clock position on the compass dial and then turn your body until the magnetic needle falls within the orienting arrow, you are facing magnetic north. To find true north, you would need to turn slightly to the left or right (unless you are in an area with 0° declination). How much to turn? That depends on the amount of declination for your part of the world. Fortunately, the exact magnetic declination for your area is usually printed right on your map. If you don't see it on your map, you can refer to the chart on the bottom left. Also, here are the magnetic declinations for a few cities across the United States:

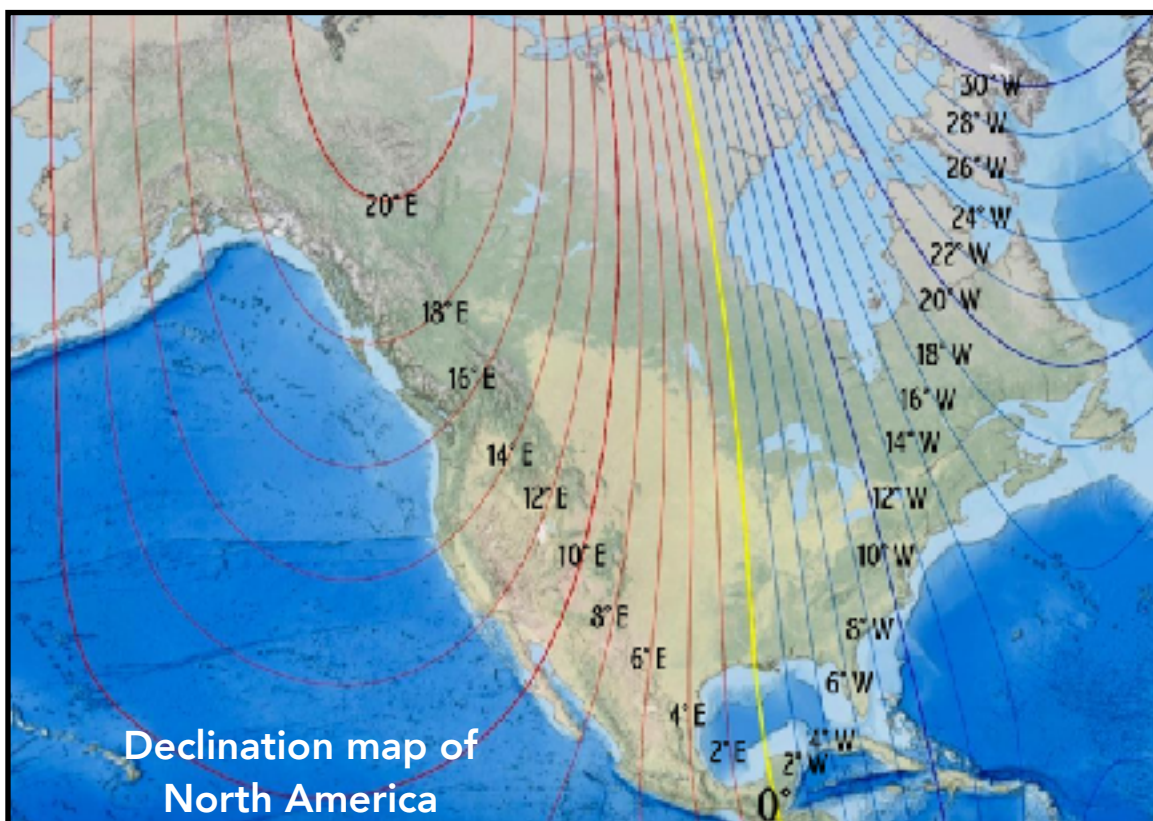
- San Francisco: 13° East
- Dallas: 3° East
- New York City: 13° West

Which way do you turn? If your declination is East, then you turn to the left until the red magnetic needle points to degree number corresponding with your declination. In San Francisco, for instance, the floating magnetic needle would point to 13°. If your declination is West, then you turn to the right until the red magnetic needle points to degree number corresponding to the difference of 360° minus your declination. In New York City, for instance, floating magnetic needle would point to 347°. After you have turned the right amount, you would be facing true north. Looking at your compass, your direction of travel arrow would be pointing to true north, with the floating magnetic needle pointing slightly to the left or right (because that needle always points to magnetic north).

Option 2: Your map may have a declination scale to help you orient your map to true north (example below). To use it, start by ensuring you have the "N" in the 12 o'clock position on your compass. Then put the orienting lines on your compass right over the top of the magnetic north (MN) indicator. Now turn the map and compass together until the floating magnetic needle falls within the printed red orienting arrow. Your compass may not align perfectly with the edges of the map— that's normal (the example below has a declination of 15° east).



Be advised: Some compasses are pre-adjusted for declination. You would likely know if yours was pre-adjusted, but if you don't know, look to see if the printed red orienting arrow points directly at "N" (for north). If it points slightly to the left or right of "N," then your compass has been adjusted for declination and you don't need to use the options above.



Tools and tactics to help you navigate

Now that you know more about your compass and declination, you are ready to figure out where you are, identify a possible safe location on the map, and if needed plan your route of travel there. You will do this in five steps:

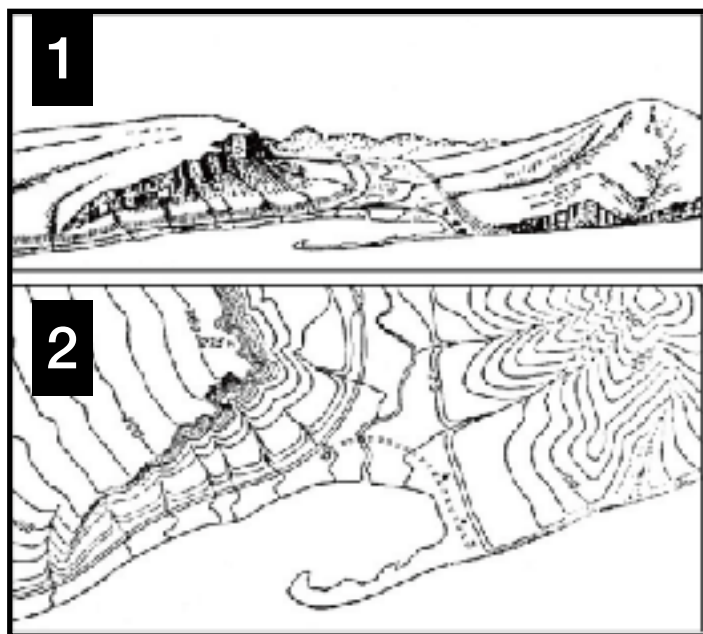
- ✓ **Step 1:** Orient your map to true north and determine where you are
- ✓ **Step 2:** Determine if there is a safe location you can travel to
- ✓ **Step 3:** Decide whether you should stay or move
- ✓ **Step 4:** Find the bearing (or direction) you need to travel
- ✓ **Step 5:** Use your compass to stay on the correct bearing

Get prepared for movement

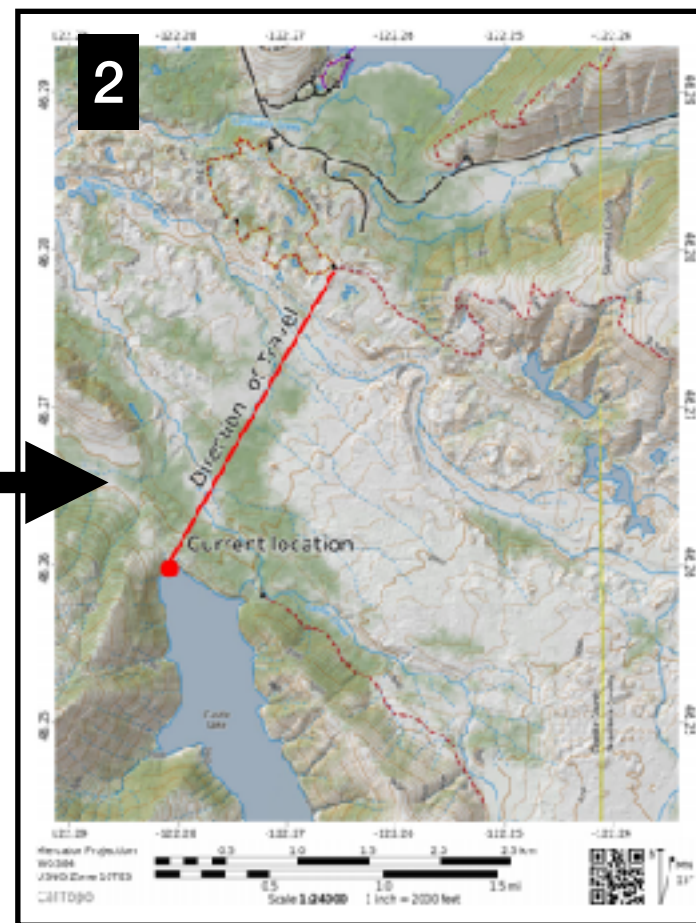
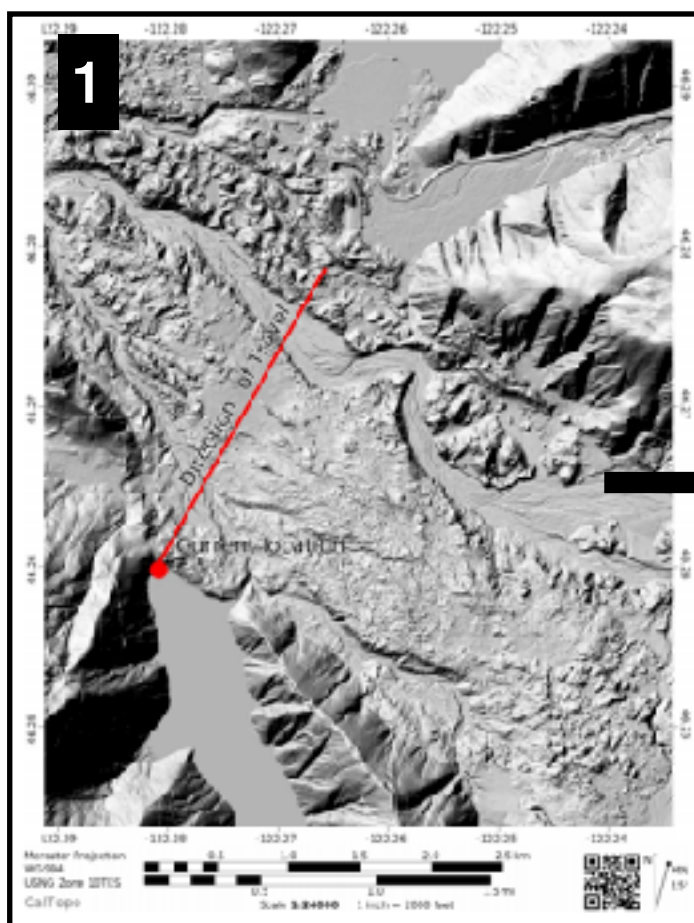
- Locate your map, compass, pencil or pen, and small notebook
- Organize your remaining items so they will be easy to carry
- If you are moving through heavy brush, wear long sleeves, gloves, and eye protection
- Plan how to keep your map and compass secure when moving - it can be easy to drop them!

Step 1: Orient your compass to true north and determine where you are: Get out your map and prepare to lay it on a flat surface. The ground is just fine! Turn your compass' bezel until north (or the "N") is at the 12 o'clock position. Remember the 12 o'clock position on the compass is where the direction of travel arrow points. Use Option 1 or Option 2 on the previous page to orient your map to true north. Either option will ensure you adjust for declination.

Step 2: Determine if there is a safe location you can travel to: Now that your map is oriented to true north, it should make a lot more sense when you look from the map to the terrain around you. Does anything stand out? Maybe a tall mountain, distinct ridge, creek, river, pond, etc? After surveying your surroundings, take another look at your map. A topographic map shows you terrain features. If you're unfamiliar with topographic maps, look at the small contour lines throughout the map. These show elevation changes. When they are close together, the slope will be steep. When they are far apart, the terrain flattens out. Steep mountains or hills often look like areas of tight circles, sometimes with an "X" to mark the peak. See the maps below for some examples. You might be able to determine where you are by studying the terrain formations around you, then referencing the map (as long as the map is still oriented north!). For example, you might be standing on the north end of a lake with a relatively flat area rising to a steep ridge to your Northeast (as in the map examples below). Based this information, you might be able to locate this lake on your map. It's important to use distinct landmarks like bodies of water or tall mountains. Distant roads can also be useful if you can see them. For instance, if you look south and see a long road east to west, you can look for that road on the map. Then you know that you are somewhere to the north of it. Perhaps an additional landmark (tall ridge, marsh, etc) near your location will then help you zero in on your area.



Examples of contour lines. The first image gives a visual depiction of the terrain. The second images show how this terrain is translated into contour lines. The images to the right include a direction of travel arrow that applies to the example in the next section on finding a bearing.



Step 3: Decide whether you should stay or move: This can be a tough decision, but only you know all the details of your situation. While it's generally better to stay put and signal for help, some situations necessitate movement, such as an urgent medical situation. If you do move, try to stay on trails. You can move faster on a trail and are more likely to encounter a friendly hiker who can help you. Leaving the main trail or planned route probably means overland bushwalking, and that is extremely hard in the backcountry. However, you may need to bushwhack if it means reaching a logging road that you absolutely know is just a couple hundred meters through the brush. But remember that once you are off route, you should follow a bearing on a your compass and keep track of your movements. If you lose sight of prominent landmarks and don't have notes on your direction of travel, you can become disoriented very quickly. This is especially risky in areas of flat forest where it is hard to see the horizon and everything looks the same. Also keep in mind that it is common for lost individuals bushwalking through forest to walk in a circular direction even though they think they are going straight. Using your compass will help prevent this from happening.

Step 4: Find the bearing (or direction) you need to travel: Is there a possible place of safety nearby? Maybe a road intersection, town, or campground?. If you know where you are and where you want to go, you can use your map and compass to find a bearing that will get you to your destination. Here is how to do it:

- Ensure your your map is oriented to true north
- Draw a line between your location and your destination
- Line one edge of your compass along the line you drew. Make sure the direction of travel arrow is pointed the way you will travel.
- Without moving the map or the compass body, turn the compass bezel (outer ring) until the compass' orienting lines parallel the north-south lines of the map
- The bearing that will get you to your destination is revealed at the 12 o'clock position of the dial. The bearing reading for the example to the right is 28°. This is your **true bearing**, meaning it aligns with true north. Remember though, your compass points to magnetic north. So unless your compass is pre-adjusted for declination (see previous page for how to tell), then you will need to adjust your bearing to account for the magnetic declination.



Finding a bearing: The north-south line (or edge of map) should parallel the orienting lines on compass. The blue lines serve to highlight how these parallel. In this example, the bearing for the direction of travel is 28°.

How to account for declination when calculating your bearing

Look at your map to find the declination (the example above shows a declination of 15° East). If your declination is East, the you subtract your declination from the true bearing. So if our true bearing is 28° and our magnetic declination 15° East, we would calculate $28^\circ - 15^\circ = 13^\circ$. The bearing we would follow is 13°. If our declination was West, we would add the declination to the true bearing. Remember the phrase "East is least and West is best" to help you adjust correctly.

Step 5: Use your compass to stay on the correct bearing: Now that you know what bearing you need to follow, turn the bezel until your bearing is at the index line. Hold the compass flat in front of your body, about waist high. Turn your body until the red magnetic needle falls in the red orienting arrow. The direction of travel arrow is now pointing you along your bearing line, which is the direction you want to move. To make it easier to travel along your bearing line, you can look for a distinct landmark along your intended path and walk towards it (look for something a few hundred yards away or less). Once you arrive at that landmark, reference your compass, align to your bearing, and choose another distinct landmark along your path of travel, and walk to it. Do this until you reach your intended destination. It's a good idea to check your map frequently, taking note of the features around you. If you hit an unplanned barrier (river, lake, cliff, etc), take your time to review your map and doublecheck your location. Try to stay aware of how far you are traveling. Counting steps can be helpful. It is also a good idea to keep notes on your route so that you can backtrack if needed.

MEDICAL

Tools and tactics to help you stay healthy

Your medical supplies are bolded in below guidance

Smaller "Ultralight" Kit

Pain/Stomach/Nausea

- Ibuprofen (1 packet)
- Diamode (1 packet)
- Dimenhydrinate (1 packet)

Wounds/Cuts/Blisters

- Bandaid (2)
- Steristrip bandage (1)
- Gauze Pad (1)
- Self adhesive wrap (1 roll)
- Castile Soap (1 towelette)
- Antibiotic ointment (1 packet)
- Triangular bandage (1)

Bugs/Burns/Allergies

- Sunblock (1 packet)
- Benadryl (1 packet)
- Bug repellent (1 packet)

Additional items in full "Hiker" Kit

Pain/Stomach/Nausea

- Ibuprofen (4 packets)
- Acetaminophen (4 packets)
- Diamode (2 packets)
- Dimenhydrinate (2 packets)
- Pepto Bismol (2 packets)

Wounds/Cuts/Blisters

- Bandaid (4)
- Nitrile gloves (1 pair)
- Micropore tape roll (1)
- Gauze pad (3)
- Gauze rolls (2)
- Elastic bandage roll (1)
- Self adhesive roll (1)
- Antibiotic ointment (2 packets)
- Hydrocortisone cream (4 packets)
- Wound seal clotter (1 tube)

Bugs/Burns/Allergies

- Sunblock (3 packets)
- Burn Cream (2 packets)
- Benadryl (1 packet)
- Bug repellent (1 packet)

Your own additions

- _____
- _____
- _____

The best way to stay healthy and injury-free while in a survival situation is to move slowly and deliberately. Rushing leads to mistakes and injuries. Make sure to give yourself time for self-care; it will make you feel better and give you a sense of control over your situation. Pay particular attention to keeping your feet and hands in good shape — they are vital to keeping you alive and getting you back to safety! The biggest risk to your health is your body temperature. If it is cold, do everything you can to stay dry and warm. If it is hot, avoid heavy exertion during the hottest part of the day. Your kit is designed for self-care, but it can also help injured companions. Medical emergencies can occur, but don't panic. Here's what to do if that happens:

- Keep calm, take a deep breath, look around. Is it safe? Get everyone to safety right away.
- Is the patient bleeding severely? If so, reduce bleeding by applying pressure to the wound.
- Is the patient breathing? If not, clear the airway and provide rescue breathing.
- Does the patient have a pulse? If not, use CPR and seek help as fast as you can.
- Shock is common after bad injuries. Treat the injury first, then reduce shock by getting the patient on their back, raising their legs slightly, and keeping them warm.

Wounds, Blisters, & Frostbite

- **Stop a bleeding wound:** You can use **nitrile gloves** for protection if treating someone else. Place **gauze pads** on wound and apply firm pressure. If bleeding won't stop, use **wound seal clotter** - just pour it on wound. If uncontrolled bleeding from an arm or leg is threatening a life, use your **triangular bandage** to fashion a tourniquet. Fold the **triangular bandage** into two-inch wide band, wrap around upper arm or leg, and tie an overhand knot. Do not place directly over a wound. Tighten by placing a **pen** or stick on that overhand knot and tying another knot over it. Twist the pen or stick to tighten the **triangular bandage** on the arm or leg. Keep tightening (it has to be really tight!) and watch the bleeding; after bleeding stops, clean wound. Mark time you applied the tourniquet on forehead of patient with your **black felt marker**. Loosen after 20 minutes to see if bleeding has stopped.
- **Clean a wound:** After bleeding stops, flush the wound with purified water to remove dirt and contaminants. Consider using the **castile soap towelette** around (but not inside) the wound. Apply **antibiotic ointment** around area. Use the **gauze roll** to wrap wound, then secure bandages with **self-adhesive wrap** or **elastic bandage roll**.
- **Deep cuts:** After controlling bleeding and sanitizing, consider using **steristrip bandage** to pull skin back together. Afterwards, keep the area clean and sanitized. Check frequently. Closing wounds can lead to infection if they are not clean. If you notice signs of infection, keep wound open and clean to the best of your ability. Continue to cover with clean bandages.
- **Blisters:** Try to catch the hotspots early before they become blisters! Place **bandaid** or **micropore** tape over reddish hotspots on your feet. If a blister has formed, cover it with a bandaid. Generally, you shouldn't pop the blister. If it pops on its own, don't remove the skin covering it. Popped blisters can get infected, so keep the area clean, use your **castile soap towelette**, and apply **antibiotic ointment** in the area to reduce the chance of infections.

Nausea & Stomach Issues

- **Vomiting:** The **dimenhydrinate** reduces nausea and can reduce vomiting, but only if it is ingested and kept down. Nausea and vomiting could be caused by altitude sickness. If you think this is the case, the only solution is to get to a lower elevation.
- **Diarrhea:** The **diamode** and **pepto bismol tablets** can help reduce or stop diarrhea. Diarrhea can dehydrate you quickly, so keep drinking lots of water. You also have **electrolyte packets** in your survival kit to help re-hydrate.

Bugs & Animals

- **Bugs:** Your **mosquito headnet** and **bug repellent** can help. Check yourself for ticks and remove them as soon as you can. Treat severe itching with **hydrocortisone cream**.
- **Animals:** Clean animal bites immediately with purified water. Wash area with **castile soap towelette**. Apply **antibiotic ointment** and **gauze pad** to injury. If a snake bites, try to identify the snake, make note of the time, keep your heart rate low, and seek help as soon as you can. Do not use a tourniquet. Do not try to suck out the venom.

Sprains & Fractures

- **Sprain:** Treat minor sprains with **ibuprofen** to reduce pain and swelling. Consider resting and elevating the sprained joint if your situation allows. Treat severe sprains with **ibuprofen** as well; **acetaminophen** can help with the pain (but not the swelling). Rest and elevate a severely sprained joint. Use available ice, snow or cold water to cool the sprained area. Use the **elastic bandage roll** to compress the area. If possible, avoid putting weight on a severely sprained joint.
- **Fracture:** If you think someone's neck or spine is fractured, avoid moving them if at all possible. If you have to, try to keep patient's spinal column straight and stable. For all fractures, attempt to limit movement of the fractured area and fashion a splint. You should immobilize the joint above and below a fracture. For the splint, use hiking sticks, sleeping pads, or natural materials to form a splint. Wrap the splint in place with **triangular bandage**, **elastic bandage**, **cord**, or **duct tape**. Secure broken arms to body with bandage to prevent unnecessary movement. Use **ibuprofen** and **acetaminophen** for pain. Don't forget to check and treat for shock.



You can use a triangular bandage to fashion an arm sling to protect an injured arm, wrist, or hand. Consider adding padding to where the arm rests against the body. If you have a broken bone, use a splint first to immobilize the joints around the break, then fashion the sling.



You can use natural materials for a splint. Secure in place with strips of clothing, duct tape, bandages, or cord.



The above position can be used to treat for shock. Raise the legs of the injured individual and wrap in a mylar blanket to keep warm. Be cautious of a cold ground sapping body heat from the injured person.

Burns & Allergies

- **Rashes and allergies:** Gently wash rash with clean water. Consider using **castile soap towelette** to clean area. **Hydrocortisone cream** can reduce itching. **Benadryl** can reduce the severity of an allergic reaction. Some allergic reactions require immediate evacuation, such as severe reactions to bee stings. But if immediate evacuation is not possible, still try the above steps.
- **Burns:** Prevent sunburns with your **sunblock**. If burned by sun or fire, apply cool water to area. Keep it clean. If skin is not open, apply **burn cream** to area to soothe pain and prevent infection.